

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 (currently amended): A method for increasing the capacity of signal transmission systems comprising N_T users, a single-piece receiver receiving the mixture of signals originating from the N_T users, ~~characterized in that it includes at least~~ comprising the following steps :

- a) determining a qualitative information $\text{Info}(Q_s)$ of the symbols estimated for each of the N_T users,
- b) transmitting this information $\text{Info}(Q_s)$ to a processing block receiving an a priori information and designed to generate a quality information, $\text{Info}(Q_{bs})$, on the bits forming the symbols, and
- c) transmitting the $\text{Info}(Q_{bs})$ to a decoding step to obtain a qualitative information on the encoded bits and $\text{Info}(Q_{bu})$ on the useful bits.

2. (currently amended): The method as claimed in claim 1, ~~characterized in that~~ wherein ~~[[the]]~~ step a) is performed using an MAP (Maximum a Posteriori) detector.

3. (currently amended): The method as claimed in claim 1, ~~characterized in that~~ wherein the steps a) to c) are repeated until the qualitative information is fairly constant.

4. (currently amended): The use of the method as claimed in ~~one of the preceding~~ claim[[s]] 1, for transmitters using one of the following modulation schemes : BPSK, QPSK, OFDM.

5. (new): The use of the method as claimed in claim 2, for transmitters using one of the following modulation schemes : BPSK, QPSK, OFDM.

6. (new): The use of the method as claimed in claim 3, for transmitters using one of the following modulation schemes : BPSK, QPSK, OFDM.